



DEPARTMENT OF COMMUNITY DEVELOPMENT

Jaclynn Workman - Administrator

HELPFUL BUILDING GUIDELINES

DETACHED GARAGE

With Bonus Area Above, Exceeding that of Limited Storage

HOW TO USE THIS GUIDE:

This guide has been designed to assist the do-it-yourselfer to create a construction plan to build a simple detached garage with bonus area above, exceeding that of limited storage, using conventional constructions methods compliant with the 2018 IRC Code. Non-conventional constructed garages will require a design professional.

1. **COMPLETE THIS BUILDING GUIDE** by filling in the blanks on page two and three and indicate which construction details will be used. If the structure will include habitable space, **STOP**. You will need to complete the application process for a New Dwelling.
2. **SUBMITTAL REQUIREMENTS** to be completed/fulfilled as required by the Community Development Department
3. **NOW YOU ARE READY TO APPLY FOR YOUR BUILDING PERMIT.** Submittal of all the required documents will help determine compliance with the building code, zoning ordinance and applicable laws.
4. **INSPECTIONS.** As stated in the Submittal Requirements a 24 hour advance notice to the Community Development Department is required for inspections. Inspections required are listed, but not limited to those on the on the *Required Inspection Brochure*.

Remember **YOU** are responsible to call for the inspections.

If you are unsure during the construction process please contact our Department for assistance. Failure to request inspections specific to your project will result in a fee of \$75 per inspection.



DISCLAIMER: This handout has been created by Tazewell County Community Development to assist with code compliance under the 2018 International Residential Code and is not intended to cover all circumstances. For further questions please check with the Department.

Detached Garage with Bonus Area Above

Note: Heated garages may require special provisions.

Floor Plan

Dimension _____

Locate and detail wall bracing

Indicate rafter or truss direction

✓ Check one

☐ Garage is heated

☐ Garage is not heated

Show door and window header sizes and location and size of landing if more than two risers.

3 1/2" minimum concrete slab
all vegetation shall be removed
(408.5)

Floor slope back to front not less than
1/8" per ft
(IRC 309.1)

Header size _____ x _____
(example (2) 2 x12 or engineered lumber)

Note: If roof trusses or rafters bear on header,
special header design may be required

Double 2x4 or 2x6 trimmers each end
of overhead door header

Garage door opening

Man Door

Man Door Opening Width

Dimension _____

Garage door opening width _____

Dimension* _____

* See Braced Wall Panel Detail on page 4 to comply
with section (IRC 602.10.2)

Dimension* _____

NOTES - Concrete Slab

- All sod and vegetation must be removed.
- If fill is required under slab it must be compacted sand or gravel.
- Floating slab from Detail A and A1 shall be monolithically poured.
- Welded wire fabric or equivalent in slab.
- Minimum 12" perimeter footing (all four sides at least 12" below grade)
- Concrete floor or curb to be 6" min. above grade (IRC 404.1.6).

Detached Garage with Bonus Area Above

☐ Truss^s OR

☐ 2x _____ rafters spaced _____" O.C.
(examples: Check the box for engineered truss or rafters such as 2x10, 24" O.C.)

Minimum 1 x _____ ridge board
(example 1 x 12) *Non Truss*

Roof sheathing _____
(example: 1/2" exterior plywood) see notes below

Roof covering: _____
(example: Class A 3 tab shingles) see notes below

Underlayment: _____
(example: 1 layer 15# felt) see notes below

12 _____
pitch _____

Ceiling Insulation: _____
If heated - example: R-38

2 x _____ ceiling joists @ _____ O.C.
See Page 7 for reference. Example 2x10 @ 24".

Double 2 x _____ top plate
(example: 2 x 6)

Span _____
(example: 23' 5")

Gable mid point height _____
(example: 15')

Siding _____
(example: lap or vinyl)

Wall Sheathing _____
(example: 1/2" exterior plywood)

2 x _____ studs @ _____ O.C.
(example: 2 x 6 @ 24" O.C.)

Cont. 2 x _____ sill plate
(example: 2 x 6)

Wall insulation _____
(If heated—example: R-19 Fiberglass Batts)

Footing size _____ x _____
(example: 8" x 16")

Building Section

Provide roof tie downs
Solid 2 x blocking between rafters that
are not 2 x 12 or greater

Non Truss

Span

Note: Pre-engineered roof
trusses w/truss clips may be
used in lieu of roof structure
shown

**Reference page 4, footing detail before
making your selection due to frost pro-
tection requirements.**

Check one

☐ A. Shallow Footing

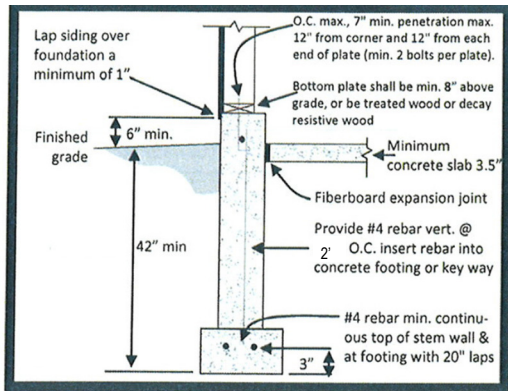
☐ B. Conventional Footing

Notes:

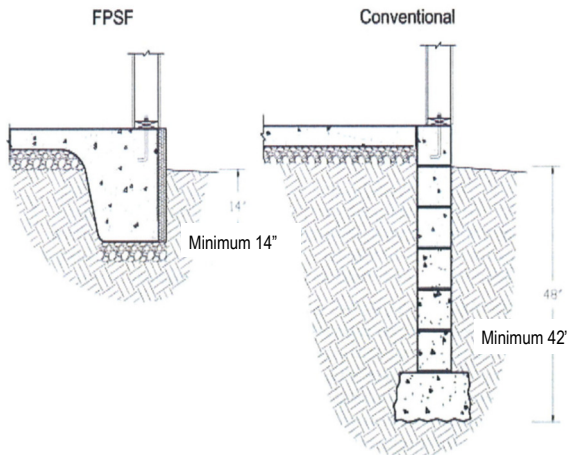
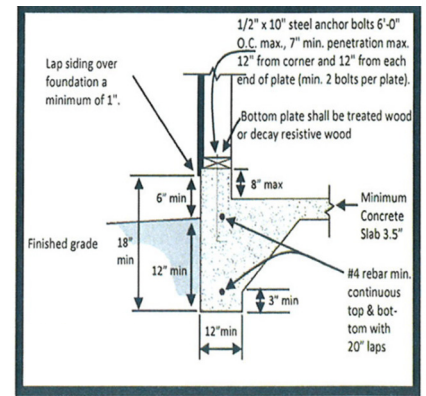
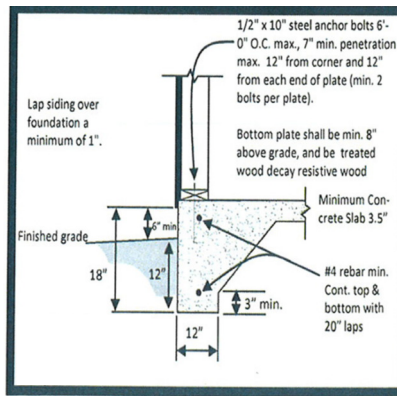
- Roof sheathing shall be a minimum of 3/8" plywood, for non-veneer OSB/WB 7/16" is the minimum. Sheathing spanning 16" or 24" on center, structural clips must be provided at the center point of each span (table R503.2.1.1 (1)d).
- For roofs with slopes less than 4:12, follow manufacturer's instructions for low slope application of roofing material.
- Shingles must be rated for 90 MPH and over 15# felt.
- Heated buildings require ice dam barrier applied inside of roof/wall junction.
- Hurricane straps, rafter ties or other tie downs shall be used to attach all roof rafters or trusses to top plates. When double top plates are used, straps or ties must attach to both plates.

Detached Garage with Bonus Area Above

Conventional Detail



Shallow Footing Detail



Minimum footing width for a two story structure is 15" based on 1500 psf soil bearing capacity unless documents provided stating otherwise.

Frost Protection:

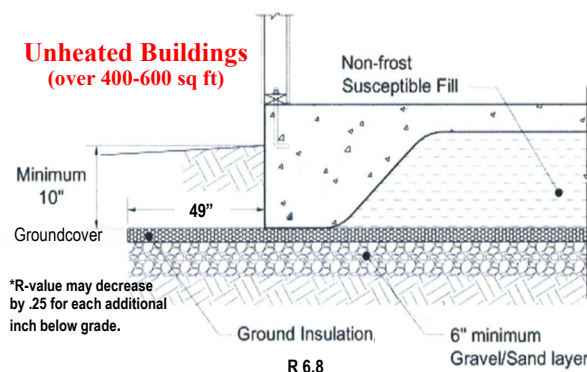
Except where otherwise protected from frost, foundation walls, piers and other permanent supports of building and structures shall be protected from frost by one or more of the following methods;

1. Extend below the frost depth of 36" to the top of the footing.
2. Heated structures insulated, as detailed in Table 403.3(1).
3. Constructed in accordance with ASCE 32 for heated and unheated structures.
4. Constructed on solid rock.

Frost Protection Exemptions:

1. Freestanding accessory structure of *light frame construction* with an area of 600 square feet or less and eave height of 10' or less.
2. Freestanding accessory structure of *anything other than light frame construction* with an area of 400 square feet or less and an eave height of 10' or less.

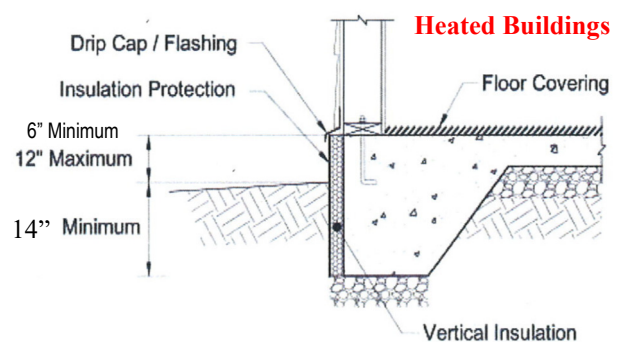
Frost Protected Shallow Footings Options; Horizontal and Vertical.



*R-value may decrease by .25 for each additional inch below grade.

R 6.8

*For each additional inch of gravel/sand below grade, R value may decrease by .3.



Detached Garage with Bonus Area Above

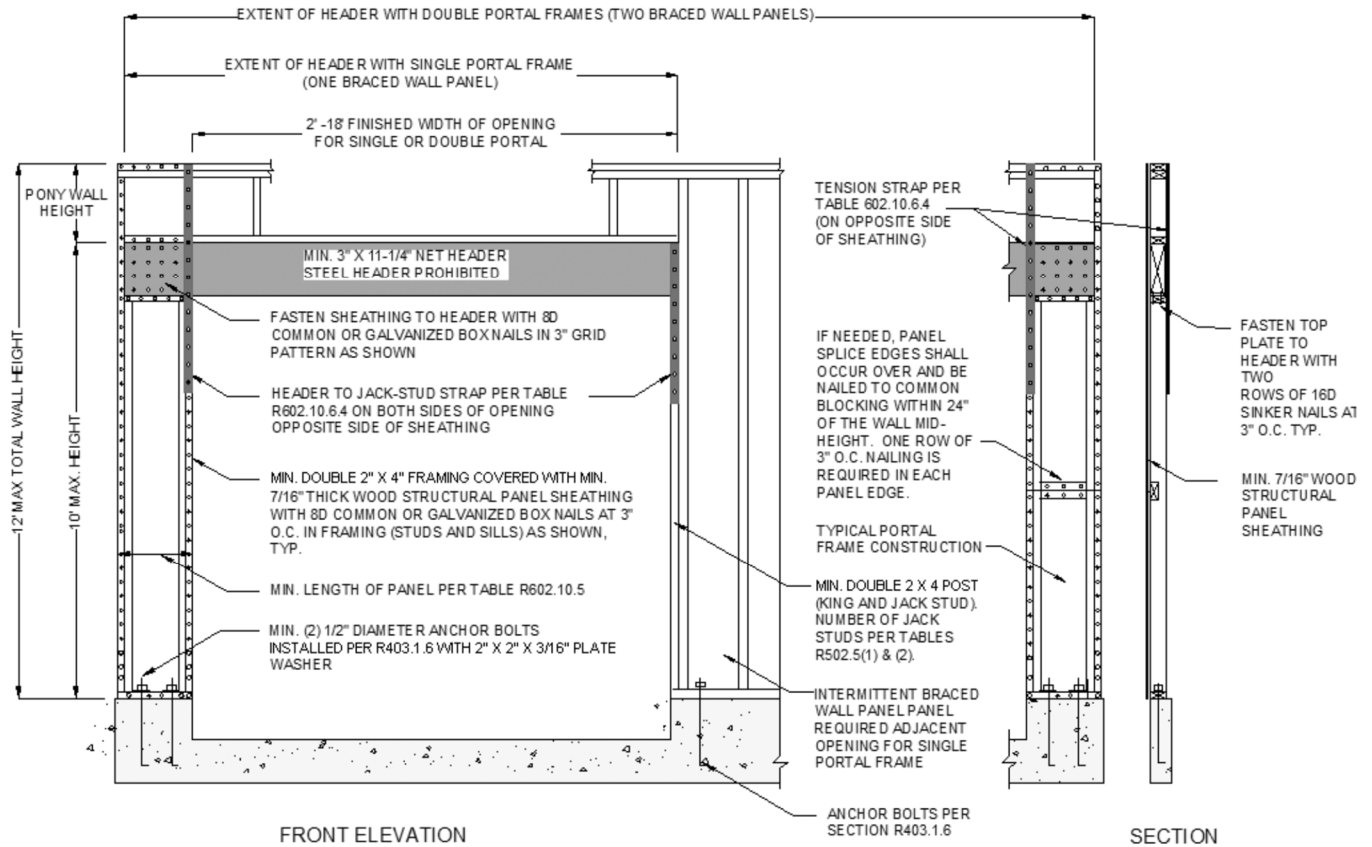


FIGURE R602.10.6.3

METHOD PFG—PORTAL FRAME AT GARAGE DOOR OPENINGS IN SEISMIC DESIGN CATEGORIES A, B AND C

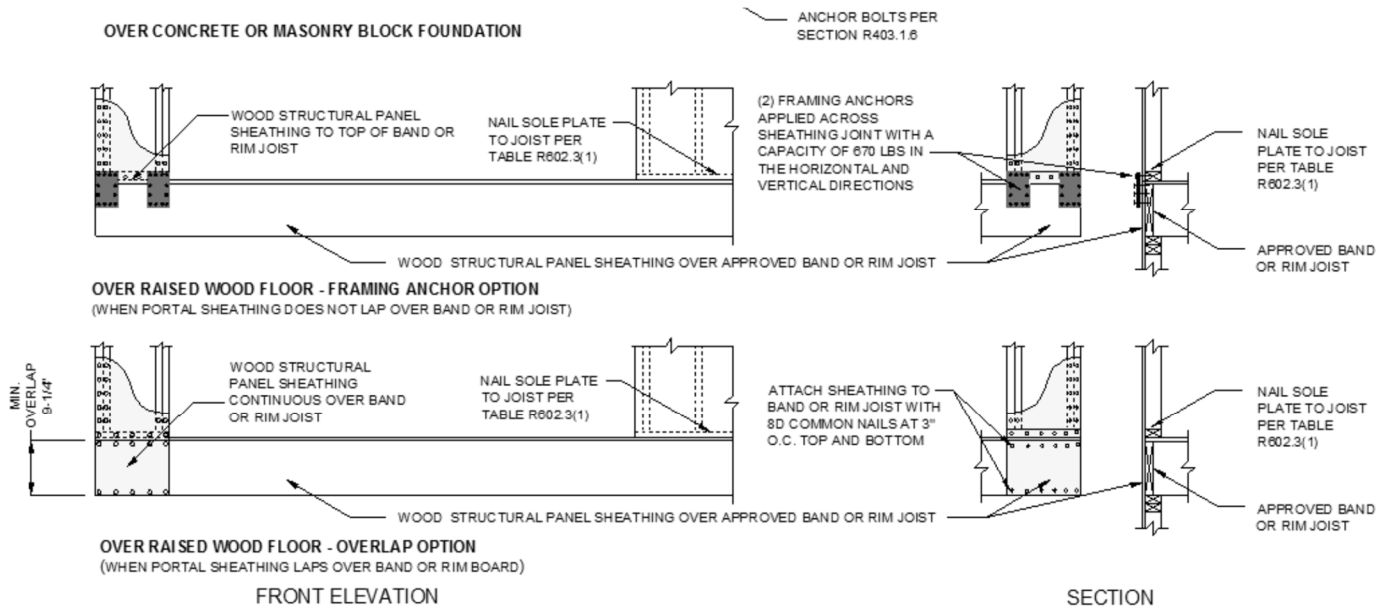


FIGURE R602.10.6.4

METHOD CS-PF—CONTINUOUSLY SHEATHED PORTAL FRAME PANEL CONSTRUCTION

A **bonus room** is a large room in a house which can be used as a multi-purpose area. A **bonus room**, unlike an American bedroom, does not usually contain a closet. A **bonus room** might be used as a family room, sewing or hobby room, game room, home cinema, office, or den. It is sometimes over a garage or in an attic area with partially reduced ceiling height or some other less desirable characteristic.

| Table R502.3.1(2) | | | | | | |
|--|----------------------|----|-----------------|-----------------|-----------------|-----------------|
| Floor joist Spans for Common Lumber Species | | | | | | |
| Residential Living Areas, Live Load = 40lbs per sq ft. | | | | | | |
| Rafter Spacing (inches) | Species and Grade | | 2 x 6 | 2 x 8 | 2 x 10 | 2 x 12 |
| | | | | | | |
| | | | (feet - inches) | (feet - inches) | (feet - inches) | (feet - inches) |
| 16 | Douglas Fir | SS | 10-4 | 13-7 | 17-4 | 21-1 |
| | | #1 | 9-8 | 12-4 | 15-0 | 17-5 |
| | | #2 | 9-9 | 12-10 | 16-5 | 19-11 |
| | Southern Pine | SS | 10-2 | 13-4 | 17-0 | 20-9 |
| | | #1 | 9-9 | 12-7 | 14-8 | 17-5 |
| | | #2 | 8-6 | 10-10 | 12-10 | 15-1 |
| 24 | Douglas Fir | SS | 9-0 | 11-11 | 15-0 | 17-5 |
| | | #1 | 7-11 | 10-0 | 12-3 | 14-3 |
| | | #2 | 7-6 | 9-6 | 11-8 | 13-6 |
| | Southern Pine | SS | 8-10 | 11-8 | 14-11 | 18-0 |
| | | #1 | 8-1 | 10-3 | 12-0 | 14-3 |
| | | #2 | 7-0 | 8-10 | 10-5 | 12-4 |

The charts above are an excerpt of the full charts provided in the IRC,

table reference is provided for your convenience.

You are not limited to the information provided above. This is simply a quick reference.